

ABSTRACT OF THE DISCLOSURE

A system and method for transferring heat requires a supply tube connected in fluid communication with a capillary tube. A tip member is positioned to surround the distal end of the capillary tube to create a cryo-chamber. In operation, a liquid refrigerant is introduced into the supply tube at a working pressure (e.g. 450 psia). The pressure is then significantly reduced on the liquid refrigerant as it transits through the capillary tube. The refrigerant then exits the distal end of the capillary tube, still in its liquid state. Inside the cryo-chamber, at a pressure of less than about one atmosphere, the refrigerant transitions into its gaseous state. The resultant refrigeration causes heat to transfer into the cryo-chamber.